



## Model List

Model	Operation Status	Detection Surface	Frequency
MDS-F2R5-5V	Normally open	Front side	Standard
MDS-F2R5B-5V			Different
MDS-F2R5U-5V		Upper side	Standard
MDS-F2R5UB-5V	Normally closed	Front side	Different
MDS-F2R5I-5V			Standard
MDS-F2R5IB-5V		Upper side	Different
MDS-F2R5UI-5V			Standard
MDS-F2R5UIB-5V			Different

## Application

- Positioning of the processing machines
- Position detection of the moving table and metal pallets
- Metal detection in a narrow space

## Features

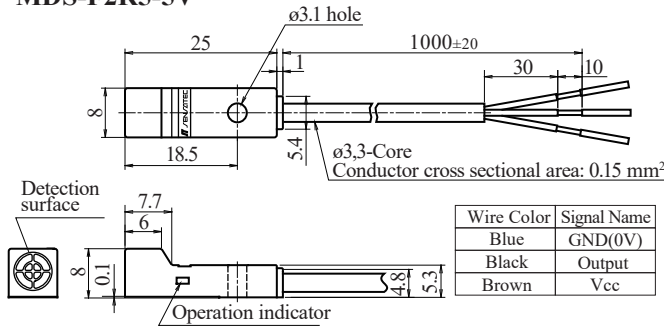
- Small inductive sensor with a detection surface of 8 mm and a detection distance of 2.5 mm.
- Simple mounting with a single M3 screw or the mounting bracket that saves space (Sold separately).
- Molded type that can be used safely even in places where water may splash.

## Rating / Performance

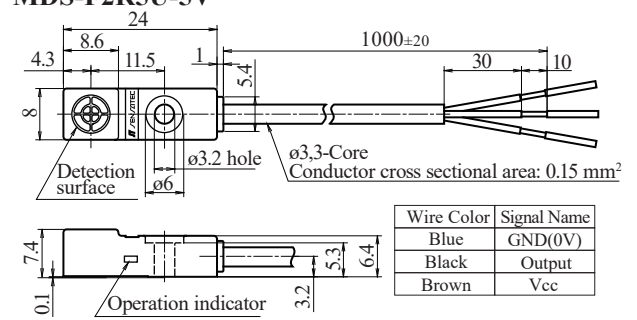
Model	MDS-F2R5-5V	MDS-F2R5I-5V	MDS-F2R5U-5V	MDS-F2R5UI-5V
Detection Surface	Front side detection		Upper side detection	
Detection Distance	2.5 mm $\pm$ 20 %			
Hysteresis	20 % or less of the detection distance			
Set Distance	0 to 1.8 mm			
Standard Detection Target	Iron sheet of 15 $\times$ 15 mm and 1 mm in thickness			
Power Supply Voltage	5 V DC (Operating voltage range : 4.5 V to 5.5 V DC)			
Current Consumption	10 mA DC or less			
Output	NPN transistor open collector 30 V DC, 100 mA DC or less			
Output Residual Voltage	1 V DC or less (Load current 100 mA DC and a 1-meter cord)			
Operation Status	Normally open (ON output when detecting)	Normally closed (OFF output when detecting)	Normally open (ON output when detecting)	Normally closed (OFF output when detecting)
Operation Indicator	Red LED (Lit when the output is ON)			
Response Frequency	1 kHz or more			
Temperature Range	-25 to 70 °C (-25 to 70 °C storage temperature range)(Without dew condensation or icing)			
Humidity Range	35 to 95 % RH (35 to 95 % RH storage humidity range)(Without dew condensation)			
Dielectric Strength	1000 V AC for 1 minute (Between the live part and case)			
Insulation Resistance	50 M $\Omega$ or more at 500 V DC megger (Between the live part and case)			
Vibration Resistance	10 to 55 Hz, 1.5 mm double amplitude in X, Y and Z directions for 2 hours each (at power off)			
Shock Resistance	1000 m/s <sup>2</sup> (Approx. 100 G) in X, Y and Z directions 10 times each (at power off)			
Protection	IP67			
Case Material	Polyarylate			
Cable	$\phi$ 3, 3-core round cord of 0.15 mm <sup>2</sup> and insulation 0.8 mm and 1 m in length (Oil and heat resistant vinyl)			
Weight	Approx. 15 g			
Options (Sold Separately)	Mounting bracket : PMS-F2R5S			

## Outline Dimensions

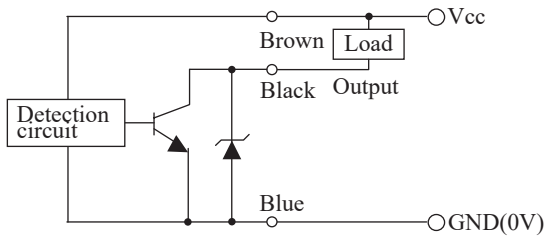
### MDS-F2R5-5V



### MDS-F2R5U-5V



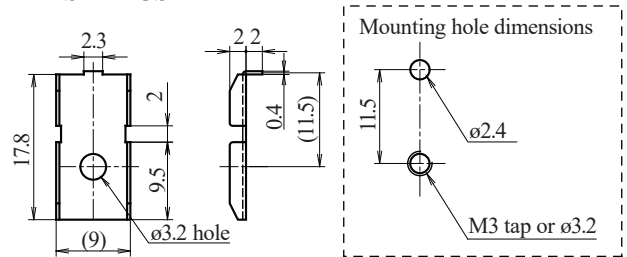
## Output Circuit



\*Because there is no reverse connection protection diode built-in, pay careful attention to the polarity of the power supply.

## Mounting Bracket (Sold Separately)

### PMS-F2R5S

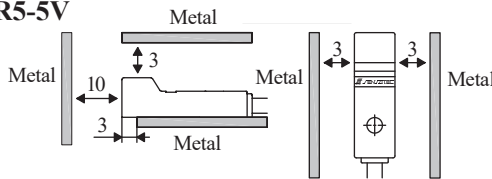


## Precautions During Use

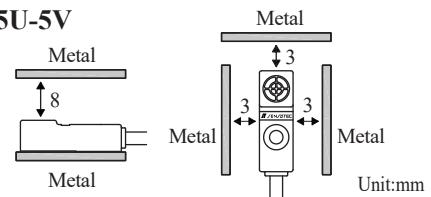
### - About the Influence of Surrounding Metal

If there are metal objects around the inductive sensor, leave at least the space indicated in the figure below between them and the sensor.

#### MDS-F2R5-5V



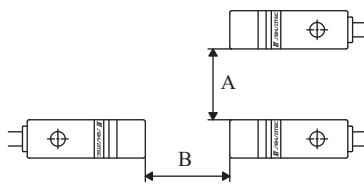
#### MDS-F2R5U-5V



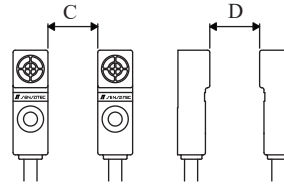
### - Reciprocal Interference

If you use a number of the same product, separate them at least by the distances shown in the figure below to prevent reciprocal interference. (Sensors with a different frequency are indicated with a B after the model name.)

#### MDS-F2R5-5V



#### MDS-F2R5U-5V



	Same frequency	Different frequency
A	18	*0
B	40	25
C	20	*0
D	40	15

\*Mark values possible for up to two devices.

Unit:mm

### - Mounting

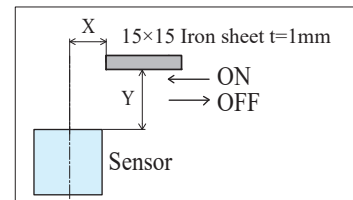
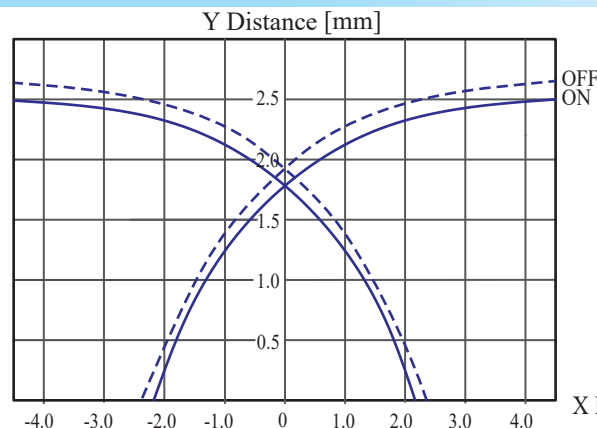
Use "flat washers and M3 screws" or "M3 truss screws" to fix the sensor.

Control the tightening torque to 0.5 N·m or less.

- For other precautions during use, refer to the General Precautions for inductive sensors.

## Characteristics Graph (Typical Example)

### Detection range



\*For a detailed specification of the other, please refer to specifications.